



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2012-1222; Directorate Identifier 2012-NM-134-AD; Amendment 39-17505; AD 2013-13-17]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc. Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), Department of Transportation (DOT).

**ACTION:** Final rule.

**SUMMARY:** We are superseding airworthiness directive (AD) 2011-13-08 for certain Bombardier, Inc. Model DHC-8-400 series airplanes. AD 2011-13-08 required a free-play check for excessive free-play of the shaft swaged bearing installed in the tailstock end of each elevator power control unit (PCU), and replacing any PCU on which the bearing exceeds allowable limits with a serviceable PCU. This new AD adds airplanes to the applicability from that of AD 2011-13-08. This AD was prompted by a determination that additional airplanes are affected by the identified unsafe condition. We are issuing this AD to detect and correct excessive free-play of the swaged bearings, which could lead to excessive airframe vibrations and difficulties in pitch control, and consequent loss of controllability of the airplane.

**DATES:** This AD becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of August 1, 2011 (76 FR 37253, June 27, 2011).

**ADDRESSES:** You may examine the AD docket on the Internet at <http://www.regulations.gov> or in person at the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Cesar Gomez, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York Aircraft Certification Office (ACO), 1600 Stewart Avenue, Suite 410, Westbury, New York 11590; telephone (516) 228-7318; fax (516) 794-5531.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. The NPRM was published in the Federal Register on December 4, 2012 (77 FR 71729), and proposed to supersede AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011). Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2010-28R1, dated June 12, 2012 (referred to after this as the

Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for the specified products. The Mandatory Continuing Airworthiness

Information (MCAI) states:

Several reports have been received on the elevator power control units (PCUs) where the shaft (tailstock) swaged bearing liners had shown a higher than normal rate of wear. Investigation revealed that the excessive wear was due to the paint contamination between the bearing roller and bearing liner. The bearing paint contamination is known to be abrasive and could seize the bearing.

This condition, if not corrected, could lead to excessive airframe vibrations and difficulties in aircraft pitch control.

This [TCCA] directive mandates a free-play check of the shaft swaged bearing installed in the elevator PCU tailstock end and replacement of the shaft swaged bearings if excessive free-play is found.

This [TCCA] AD is revised to amend the applicability for DHC-8 Series 400 aeroplanes.

The unsafe condition is loss of controllability of the airplane. You may obtain further information by examining the MCAI in the AD docket.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We have considered the comments received.

### **Request to Clarify Applicability**

Bombardier, Inc. stated that the applicability in the NPRM (77 FR 71729, December 4, 2012) is “ambiguous.” Bombardier noted that the applicability specifies a serial number range of airplanes, but the NPRM could be interpreted to apply to those PCUs or bearings installed on the airplane at the time of manufacture. Bombardier added

that the preamble and service information sections of the NPRM contribute to this interpretation by citing paint contamination during airplane manufacture as the basis for bearing wear, in addition to the identification of PCUs and bearings by part number. Bombardier stated that the affected airplanes have a production run between the years 2000 and 2010; the PCUs are line replaceable units and could have been removed from an affected airplane and installed on an airplane outside of the serial number range. Bombardier concluded that if the intent of the NPRM is to apply to PCUs installed at the time of airplane manufacture, there are no provisions to account for those PCUs in the NPRM or in the service information.

We infer that the commenter wants clarification of the applicability. We agree to clarify. This AD applies only to those airplanes having serial numbers (S/Ns) 4001 through 4334 inclusive, and 4336, and matches the applicability of Canadian Airworthiness Directive CF-2010-28R1, dated June 12, 2012. Based on the infrequent removal and replacement of single actuators, we have determined it is not necessary to include additional airplanes in the applicability at this time. To alter the applicability to include additional airplanes would require additional rulemaking. We find that delaying this action would be inappropriate in light of the identified unsafe condition. However, we might consider additional rulemaking to address any airplanes that might be identified in the future as having an affected PCU or bearing. We have made no change to this AD in this regard.

#### **Request to Give Credit for Previous Accomplishment of Certain Inspections**

Bombardier also stated that maintenance review board (MRB) Task 273000-213, “Functional Check of the Elevator Free Play,” was introduced on February 10, 2011, with

a 12,000-flight-hour interval. Bombardier added that the NPRM (77 FR 71729, December 4, 2012) contains no provisions for giving credit for inspections accomplished using the MRB task, which applies to all airplanes and addresses excessive elevator free-play, regardless of the source.

We disagree to give credit for previous accomplishment of the free-play inspections using that MRB task because that task does not meet the requirements in this AD. The free-play inspections in this AD must be performed at the required compliance times in accordance with Bombardier Service Bulletin 84-27-52, dated May 25, 2010; or Revision A, dated March 5, 2012. However, as specified in paragraph (l)(1) of this AD, we might approve a request for an alternative method of compliance for the inspection requirements of this AD if substantiating data supporting the request is provided. We have made no change to the AD in this regard.

### **Conclusion**

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting this AD as proposed.

### **Costs of Compliance**

We estimate that this AD affects about 81 products of U.S. registry.

The actions that were required by AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011), and retained in this AD take about 3 work-hours per product, at an average labor rate of \$85 per work hour. Based on these figures, the estimated cost of the actions retained from AD 2011-13-08 is \$255 per product.

We estimate that it will take about 3 work-hours per product to comply with the new basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD on U.S. operators for the added airplanes to be \$255 per product.

In addition, we estimate that any necessary follow-on actions will take about 5 work-hours and require parts costing \$33, for a cost of \$458 per product. We have no way of determining the number of products that may need these actions.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on

the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

#### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the MCAI, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is in the ADDRESSES section.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011), and adding the following new AD:

**2013-13-17 Bombardier, Inc.:** Amendment 39-17505. Docket No. FAA-2012-1222; Directorate Identifier 2012-NM-134-AD.

#### **(a) Effective Date**

This airworthiness directive (AD) becomes effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD supersedes AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011).

#### **(c) Applicability**

This AD applies to Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes; certificated in any category; having serial numbers (S/Ns) 4001 through 4334 inclusive, and 4336.



**(d) Subject**

Air Transport Association (ATA) of America Code 27: Flight controls.

**(e) Reason**

This AD was prompted by reports of replacement of several elevator power control units (PCUs) due to worn swaged bearings located in the elevator PCU tailstock. We are issuing this AD to detect and correct excessive free-play of the swaged bearings, which could lead to excessive airframe vibrations and difficulties in pitch control, and consequent loss of controllability of the airplane.

**(f) Compliance**

You are responsible for having the actions required by this AD performed within the compliance times specified, unless the actions have already been done.

**(g) Retained Free-Play Check with Revised Service Information**

This paragraph restates the requirements of paragraph (g) of AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011), with revised service information. For airplanes identified in paragraph (c) of this AD, except airplanes having S/N 4305 through 4334 inclusive, and 4336: At the applicable time specified in paragraphs (g)(1) and (g)(2) of this AD, perform a free-play check for any shaft swaged bearing having part number (P/N) MS14103-7 that is installed in the tailstock end of each elevator PCU (three PCUs per elevator surface) having P/Ns 390600-1007 and 390600-1009, in accordance with paragraph 3.B., Part A, of Bombardier Service Bulletin 84-27-52, dated May 25, 2010; or Revision A, dated March 5, 2012. As of the effective date of this AD,

only Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012, may be used to accomplish the actions required by this paragraph.

(1) For airplanes that have accumulated 8,000 or more total flight hours as of August 1, 2011 (the effective date of AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011)): Within 2,000 flight hours after August 1, 2011 (the effective date of AD 2011-13-08).

(2) For airplanes that have accumulated less than 8,000 total flight hours as of August 1, 2011 (the effective date of AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011)): Within 6,000 flight hours after August 1, 2011 (the effective date of AD 2011-13-08), or before the accumulation of 10,000 total flight hours, whichever occurs first.

**(h) Retained Follow-on Action with Revised Service Information**

This paragraph restates the requirements of paragraph (h) of AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011), with revised service information. If, during the check required by paragraph (g) of this AD, the bearing free-play is within the limits specified in Bombardier Service Bulletin 84-27-52, dated May 25, 2010, or Revision A, dated March 5, 2012; no further action is required by this AD. As of the effective date of this AD, only Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012, may be used to accomplish the actions required by this paragraph.

**(i) Retained Corrective Actions with Revised Service Information**

This paragraph restates the requirements of paragraph (i) of AD 2011-13-08, Amendment 39-16731 (76 FR 37253, June 27, 2011), with revised service information.

If, during the check required by paragraph (g) of this AD, the bearing free-play exceeds the limits specified in Bombardier Service Bulletin 84-27-52, dated May 25, 2010; or Revision A, dated March 5, 2012: Before further flight, replace the elevator PCU with a serviceable one, in accordance with paragraph 3.B., Part B, of Bombardier Service Bulletin 84-27-52, dated May 25, 2010; or Revision A, dated March 5, 2012. As of the effective date of this AD, only Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012, may be used to accomplish the actions required by this paragraph.

**(j) New Free-Play Check**

For airplanes having S/N 4305 through 4334 inclusive, and 4336: At the applicable time specified in paragraphs (j)(1) and (j)(2) of this AD, perform a free-play check for any shaft swaged bearing having P/N MS14103-7 that is installed in the tailstock end of each elevator PCU (three PCUs per elevator surface), having P/Ns 390600-1007 and 390600-1009, in accordance with paragraph 3.B., Part A, of Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012.

(1) For airplanes that have accumulated 8,000 or more total flight hours as of the effective date of this AD: Within 2,000 flight hours after the effective date of this AD.

(2) For airplanes that have accumulated less than 8,000 total flight hours as of the effective date of this AD: Within 6,000 flight hours after the effective date of this AD, or before the accumulation of 10,000 total flight hours, whichever occurs first.

**(k) New Corrective Actions**

During the check required by paragraph (j) of this AD, if the bearing free-play is found to exceed the limits specified in Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012: Before further flight, replace the elevator PCU with a serviceable one, in accordance with paragraph 3.B., Part B, of Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012.

**(l) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, New York Aircraft Certification Office (ACO), ANE-170, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the ACO, send it to Program Manager, Continuing Operational Safety, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone (516) 228-7300; fax (516) 794-5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office. The AMOC approval letter must specifically reference this AD.

**(2) Airworthy Product:** For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of

Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

**(m) Related Information**

Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2010-28R1, dated June 12, 2012, for related information, which can be found in the AD docket on the Internet at <http://www.regulations.gov>.

**(n) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(i) Bombardier Service Bulletin 84-27-52, Revision A, dated March 5, 2012.

(ii) Reserved.

(4) The following service information was approved for IBR on August 1, 2011 (76 FR 37253, June 27, 2011).

(i) Bombardier Service Bulletin 84-27-52, dated May 25, 2010.

(ii) Reserved.

(5) For service information identified in this AD, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>.

(6) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on June 21, 2013.

Jeffrey E. Duvén,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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